Copper Cable Nomenclature

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Nomenclature

- Goal: Align on the nomenclature to enable effective communication during foundational discussions in the 3df Task Force

Background

- Not all copper cables are passive copper cables
  - Non-passive copper cables contain active elements in the transmit and/or receive path within the cable assembly
- Cartoon pictures of cable plug ends in this presentation are intended to generically represent one of the common form factors: SFP, SFP-DD, DSFP, QSFP, QSFP-DD, OSFP, etc.
- This presentation does not suggest nomenclature for, nor advocate for/against, "Active optical cables" or "AOCs"
  - Talk to Kent offline if you have inputs!
- Different types of cables address different industry usage models

Passive Copper Cable
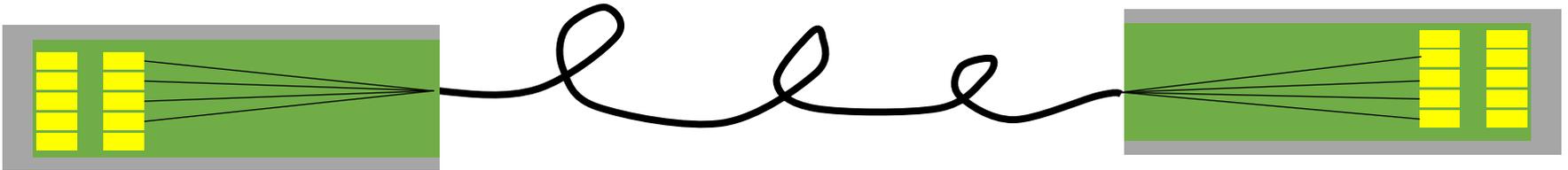
Not drawn to scale

- Passive
  - Each plug end is passive
- Host interface is a "CR" PMD

Active Electrical Cable (AEC)
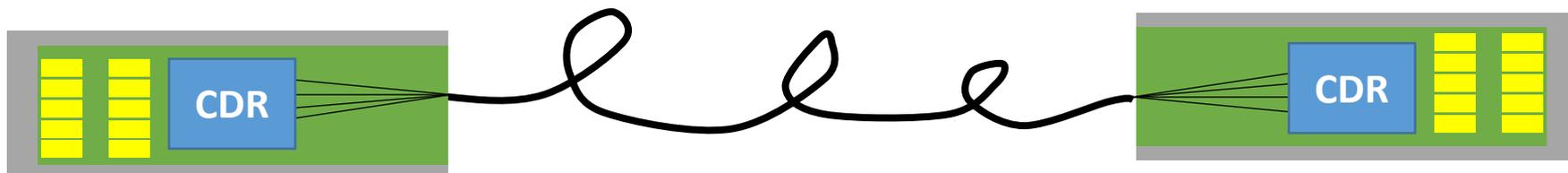
Fully Retimed = Active Electrical Cable (AEC)

- Fully Retimed
  - Each plug end contains a CDR device that retimes the incoming <u>and</u> outgoing signal
- Host interface could be an AUI

Active Electrical Cable (AEC) - Part 2
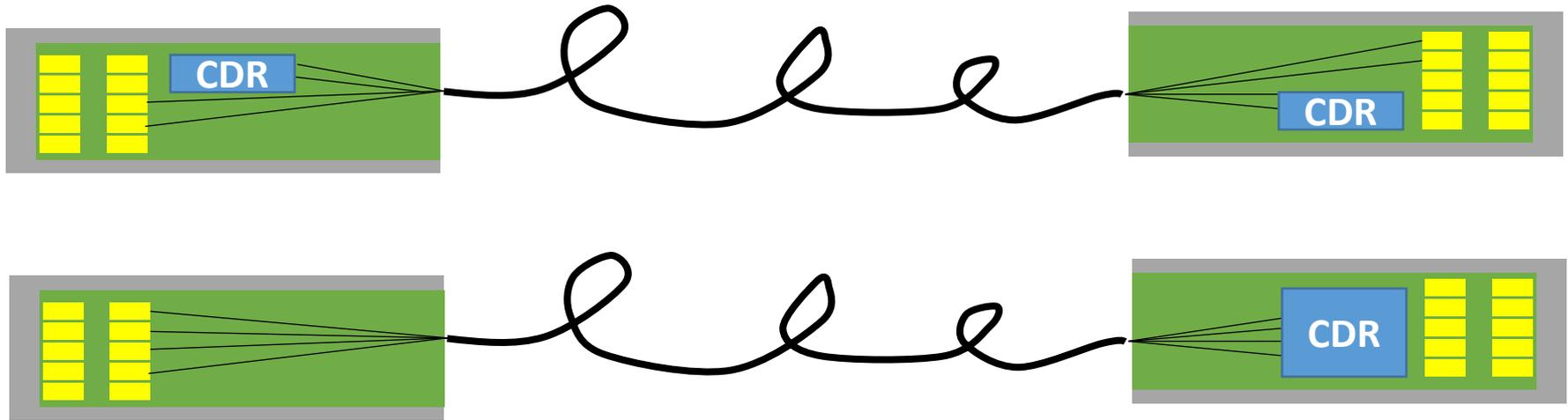
- Half Retimed has two approaches
  - Each plug end contains a "half" CDR device that retimes the incoming (from host) <u>or</u> outgoing (to host) signal
  - One plug end contains a full CDR that retimes the incoming <u>and</u> outgoing signal

Non-retimed Active Copper Cable (ACC)
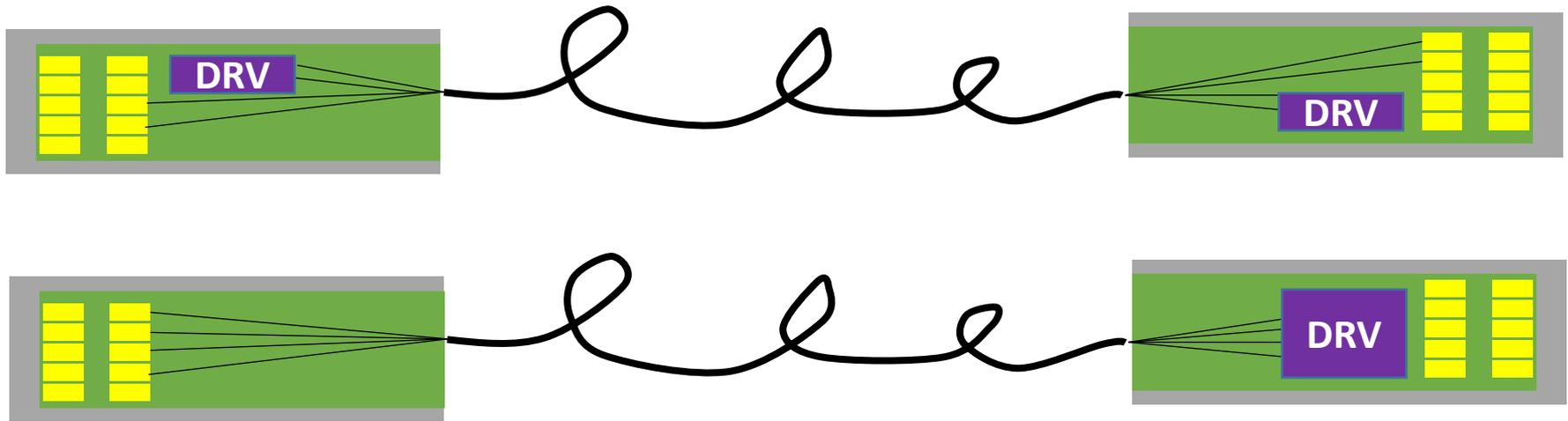
- Non-Retimed
  - Each plug end contains a "half" redriver device that equalizes the outgoing (to host) signal
  - One plug end contains a redriver device that equalizes the incoming and outgoing signal
- Host interface could be a "CR"-like PMD

THANKS!

Additional Information

- https://www.intel.com/content/www/us/en/io/serial-bus-white-paper.html